ACCESSION NR: AR4015487

of the calculations for corrections (with the calculation of the speed of sound by different formulas) differed from one another. The seasonal variation of corrections for the deviation of the actual speed of sound in sea water to the calculated speed is shown. It was established by means of an analysis of the calculations that the fathometer corrections, in the computation of which the speed of sound was determined according to British Admirality tables (and then according to Zubov's tables) and according to Kuvakhar's formula, coincide, but differ by a certain constant value from corrections computed according the values of the speed of sound in sea water based on Del Grosso's tables or monograms. The correction obtained according to the last formula in all cases was larger than the correction, during the calculation of which the first of the named sources were used. The maximum divergences are given by corrections on the speed of sound obtained using Del Grosso's formulas and found from Matthew's tables, in which the seasonal variation of hydrological elements were not considered and the corrections were considered constant throughout the whole year for large ocean regions. A comparison of data according to season (spring and autumn) showed that the variation of hydrological characteristics affects the value of the correction. This effect was particularly great in the zones of hydrological fronts where significant deviations in the actual speed of sound from that calculated arise. It was established that the most precise correction for deviation of the actual speed of sound from the calculated is obtained

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ACCESSION NR: AR4015487

during determination of the speed of sound in sea water according to Del Grosso's formula. B. Zalogin.

DATE ACQ: 09Jan64 SUB CODE: AS, PH ENCL: 00

Card 3/3

GRUZINOV, V.M.; CHEKOTILLO, K.A.

Dynamic characteristics of the subpolar front in the North Atlantic. Dokl. AN SSSR 153 no.6:1307-1309 D '63.
(MIRA 17:1)

1. Gosudarstvennyy okeanograficheskiy institut. Predstavleno akademikom Ye.K. Fedorovym.

GRUZINOV, V.M.

Convection overturn in the zone of the subpolar front in the North Atlantic. Trudy GOIN no.77:39-45 '64. (MIRA 18:1)

GRUZINOV, V.M.

Geostrophic currents in the subpolar front zone in the northern part of the Atlantic Ocean. Okeanologiia 4 no.2:243-248 '64. (MIRA 17:5)

1. Gosudarstvennyy okeanograficheskiy institut.

GRUZINOV, V.M.

Vertical circulation and the position of fronts zones in the central part of the North Atlantic. Okeanologiia 4 no.3:408-411 '64. (MIRA 18:1)

1. Gosudarstvennyy okeanograficheskiy institut.

L 22033-66 EWT(1) GW

ACC NR: AT6006533 (N) SOURCE CODE: UR/2634/65/000/084/0252/0262

AUTHOR: Gruzinov, V. M.

ORG: State Oceanography Institute, Moscow (Gosudarstvennyy okeanograficheskiy institut)

TITLE: The hydrologic front as a boundary of natural zones in the ocean

SOURCE: Moscow. Gosudarstvennyy okeanograficheskiy institut. Trudy, no. 84, 1965. Voprosy morskoy meteorologii i okeanografii (Problems in marine meteorology and oceanography), 252-262

TOPIC TAGS: ocean dynamics, hydrography, ocean property

ABSTRACT: This paper considers problems associated with the delineation of physico-geographic zones in the Atlantic Ocean and of fronts between these zones. The author has examined the principal aspects of the subpolar front that separates water in the temperate zone from water in the subpolar zone in the North Atlantic. No such boundary exists southward in the tropics and the equatorial zone as relations here are more complex. The author made an isopycnic study of all water bodies north of 40° N lat and was able to delineate a zone of interacting water masses by the position of the 50% relative salinity isopleth at different isopycnic surfaces (26.5, 27.0, 27.2, 27.5, and 27.8). This isopleth marks the boundary between waters of the temperate zone and the subpolar zone, or of the North Atlantic and Subarctic structures in the water. Several

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L 22033-66
ACC NR: AT6006533

maps have been provided to show this boundary, not only on the basis of relative salinity but from observational data obtained during the IGY, on the basis of divergent and convergent water currents, and from the distribution of boreal and tropical fauna. It is concluded that the subpolar hydrologic front in the northern part of the Atlantic is a natural transitional zone between subpolar water and water of the temperate zone. It has very specific hydrologic conditions. The author expresses his sincere thanks to Professor A. M. Muromtsev, under whose guidance the work was carried out. Orig. art. has: 4 figures.

SUB CODE: 08/ SUBM DATE: none/ ORIG REF: 015/ OTH REF: 004

Card 2/2 nst

ACC NR: AT6031967 SOURCE CODE: UR/2634/66/000/079/0117/0122

AUTHOR: Gruzinov, V. M.

ORG: none

TITLE: Drift circulation in the zone of the subpolar hydrologic front

SOURCE: Moscow. Gosudarstvennyy okeanograficheskiy institut. Trudy, no. 79, 1966. Voprosy urovnya i techeniy (Problems of water level and currents), 117-122

TOPIC TAGS: geostrophic wind, subpolar front, tangential wind stress, atmospheric pressure gradient, drift circulation, ATMOSPHERIC PRESSURE, ATMOSPHERIC CIRCULATION

ABSTRACT: Analysis of geostropic circulation in the North Atlantic Ocena proved that the basic flow of the North Atlantic current has no seasonal changes in position or velocity. Some seasonal changes occur in the subpolar front. The drift circulation in the North of the Atlantic Ocean was studied in spring and autumn. Geostrophic currents in deep oceanic layers represent the real motion of water, but on the surface of the ocean tangential wind stress plays a role and the general stream is the sum of drift and geostrophic currents. The drift component is determined using Eckmann's formula. The subpolar water

Card 1/2 UDC: 551.465.261

ACC NR: AT6031967

surface of Atlantic Ocean was divided into quadratic areas, each side of which was two-degrees long between the latitudes of 40° and 65°. The atmospheric-pressure gradient was used for determining the geostrophic-wind field. There are many methods for the determination of the atmospheric-pressure gradient. In this case the gradient is determined using formulas of finite differences. Components of the geostrophic wind were determined by formulas of K. A. Chekotillo. Results of these investigations revealed that types of atmospheric processes in winter and autumn differ in closed seas. In the free ocean, atmospheric processes exhibit a western deviation. Variations of drift circulations in summer and autumn occur mostly north of the 60th parallel. Maps containing vectors of drift currents show a cyclonic structure on the oceanic surface. In March the drift in lower latitudes westerly in the western part of the ocean and the easterly in the eastern part. In higher latitudes the drift is northerly. In September the drift in the western part of the ocean is southerly; only a small part in the east and north is northerly. Orig. art. has: 2 figures and 3 formulas.

SUB CODE: 08/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 002

Card 2/2

ACC NR: AP6030455 (N) SOURCE CODE: UR/0213/66/006/004/0593/0598

AUTHOR: Gruzinov, V. M.

ORG: State Oceanographic Institute, Moscow (Gosudarstvennyy okeanograficheskiy institut)

TITLE: Determination of depth of thermohaline mixing in the tropical regions of the oceans

SOURCE: Okeanologiya, v. 6, no. 4, 1966, 593-598

TOPIC TAGS: tropical zone, heat advection, oceanography, thermohaline mixing, salinity, ocean property, ocean dynamics

ABSTRACT: The present study was based on Tsikunov's method of computing thermohaline mixing and the Atlas edited by Budyko, which shows that in the tropical zones of the oceans horizontal heat advection is close to zero. Computation of thermohaline mixing depths was made from observations at a number of stations in the tropical latitudes of the Pacific, Atlantic, and Indian Oceans. Considering an increase in surface water salinity due to evaporation, this depth has been determined to be 50—80 m in the Pacific, 50—75 m in the Atlantic Ocean, and about 100 m in the Indian Ocean. The method used helps to show in detail the distribution of mixing in those regions where strong ocean currents are absent. Orig. art. has: 2 formulas and 4 figures.

SUB CODE: 08/ SUBM DATE: 06Jul65/ ORIG REF: 006

Card 1/1

GRUZINOV, Vladimir Petrovich; PAK, G.V., red.; GERASIMOVA, Ye.S., tekhn. red.

[Wages in the industry of socialist countries] Zarabotnaia plata v promyshlennosti sotsialisticheskikh stran. Moskva, Ekonomizdat, 1963. 323 p. (MIRA 16:7)
(Europe, Eastern--Wages)

GRUZINOV, IA. A.

Baku. The utilization and servicing of the gas engine compressor "Clark" RA-3 Sostavili IA. A. Gruzinov i Sh.P. Arzumanov Baku, Aznefteizdat, 1945. 59 p. (54-35323)

TJ990.B34

SHAKHMALIYEV, G.M.; GRUZINOV, Ya.A.

Efficient lowering of drill tool. Azerb. neft. khoz. 37 no.4:14-17 Ap '58. (MIRA 11:8)

(Petroleum engineering)

SHAKHMALIYEV, G.M.; GRUZINOV, Ya.A.

Calculating the design load on the brake of a draw works. Azerb. neft. khoz. 38 no.2:19-20 F '59. (MIRA 12:5)
(Cranes, derricks, etc.)

SHAKHMALIYEV, G.M.; GHUZINOV, Ya.A.

Automaticcontrol of the lowering of drilling tools. Azerb. neft. khoz. 39 no.11:22-25 N '60. (MIRA 13:12)
(Boring machinery) (Automatic control)

GRUZINOV, Ya.A.

Determining the braking moment of the brake of a drawworks.
Neft. khoz. 42 no.11:41-45 N '64 (MIRA 18:2)

SHAKHMALIYEV, G.M.; GRUZINOV, Ya.A.; KOGAN, R.N.

Efficient lowering of the drilling tool in the simultaneous operation of power and hydraulic brakes of draw works. Sbor. nauch.-tekh. inform. Azerb. inst. nauch.-tekh. inform. Ser. Neft. prom. no.4:15-32 '63. (MIRA 18:9)

GRUZINOV, Ya.A.

Design of the brake bands of draw works. Mash. i neft. obor. no.6:11-14 '65. (MIRA 18:7)

1. AzNIIburneft'.

GRUZINOV, Yevgraf Vladimirovich; RYABKOV, Boris Aleksandrovich; TOLCHEYEV, Tikhon Mikhaylovich; LYTKINA, L.S., red.izd-va; PEREVALYUK, M.V., red.izd-va; MIKHEYEVA, A.A., tekhn. red.

[Assembly of the processing equipment of chemical plants] Montazh tekhnologicheskogo oborudovaniia khimicheskikh zavodov. Moskva, Gosstroiizdat, 1963. 231 p. (MIRA 16:8)
(Chemical plants--Equipment and supplies)

GRUZINOV, Ya.A.; KOGAN, R.N.

Dependence of the braking moment on the design parameters of the brake of a drilling draw works. Mash. i neft. obor. no.8:17-20 '64.
(MIRA 17:11)

1. AzNIIburneft'.

GRUZINOV, Yakov Aleksandrovich, kand. tekhn. nauk

[Method for calculating sucker rods for endurance] Metodika rascheta shtangovykh kolonn na vynoslivost'. Baku, Azerneshr, 1965. 125 p. (MIRA 18:10)

L 62781-65 EWT(1)/FCC GW

ACCESSION NR: AR5012911 UR/0169/65/000/003/B048/B049 18
551.551 B

SOURCE: Ref. zh. Geofizika, Abs. 3B295

AUTHOR: Gruzinova, L. G.; Sofiyev, Ye. I.

TITLE: Relationship between the Richardson number and atmospheric turbulence

CITED SOURCE: Tr. Sredneaz. n.-i. gidrometeorol. in-ta, vyp. 19(34), 1964, 79-82

TOPIC TAGS: Richardson number, atmospheric turbulence, radiosonde

TRANSLATION: Measurements were made by means of radiosondes with an overloading adapter designed by the Central Aerological Observatory (TsAO). Data are given on the distribution of the Richardson Number (Ri) in turbulent and nonturbulent zones. The magnitude of turbulent formations to which the radiosonde was sensitive was 2 to 10 m. The Ri numbers were calculated for layers 1 km in distance from each other and at special points in the temperature range. The values of the Ri numbers obtained were attributed to the midportions of the respective layers. In the presence of cloudiness, a moist-adiabatic gradient was used to express the Ri number. To determine the Ri numbers and their relationship to turbulence, the

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ACCESSION NR: AR5012911

weighted mean values of the Ri number along the thickness of the layers were calculated, their distribution was plotted in graduations from 10 to 150, and the probabilities of turbulence were calculated for Ri numbers within each graduation. The following hypotheses were tested: (1) low Ri numbers unequivocally indicate turbulences; a low Ri is (2) a sufficient and (3) a necessary conditions for turbulence. The first and third hypotheses were not confirmed. The question as to whether a low Ri number is sufficient to indicate the presence of a turbulence remains obscure. R. Pastushkov.

SUB CODE: ES ENCL: 00

Card 2/2

L 16919-66 EWT(1)/FCC GW

ACC NR: AT6004110 SOURCE CODE: UR/2648/65/000/023/0050/0054

AUTHOR: Gruzinova, L. G. 36 B+1

ORG: Central Asian Scientific Research Hydrometeorological Institute, Tashkent (Sredneaziatskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut)

TITLE: The problem of intradiurnal pressure variation 12,44,55

SOURCE: Tashkent. Sredneaziatskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut. Trudy, no. 23(38), 1965. Voprosy aerologii subtropicheskikh i tropicheskikh rayonov (Problems in the aerology of subtropical and tropical regions, 50-54

TOPIC TAGS: troposphere, atmospheric pressure, diurnal variation

ABSTRACT: Tropospheric pressure variations over Tashkent, Alma-Ata, Nanay, and Varzyk were determined from radiosonde data obtained in 3 hr intervals in February, March, May and June. The pressure variability decreased to a minimum at the 4-5 km mid-tropospheric level and again at the 16 km upper troposphere-lower stratosphere level. The pressure change-time interval change (ΔP-Δt) functions for time intervals of 3-24 hours, usually linear, were sometimes shown by parabolic formulae. The cause of such variations could not be determined by analysis of such intermittent studies in different locations. The pressure

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ACC NR: AT6004110

variation characteristics for Nanay and Tashkent and for Tashkent and Varzyk were quite similar in spite of the different physical-geographical conditions and the distance. It was concluded that the effect of synoptic processes on pressure variations is apparently so great that it is impossible to recognize, from a small number of observations, the features caused by differences in physical-geographical conditions. Orig. art. has: 2 figures and 1 table.

SUB CODE: 04/ SUBM DATE: 00/ ORIG REF: 004

BUGAKOV, P.I.; GRUZINOVA, T.A.; IONAYTIS, R.R.; KAMEN'SHCHIKOV, F.T.; POPOV, D.N.

[Study of a hydraulic system with a body moving within it] Issledovanie gidravlicheskoi sistemy s dvizhushchimsia v nei telom. [n.p.] Gos.kom-t po ispol'zovaniiu atomnoi energii, 1960. 42 p. (MIRA 17:1)

(Hydraulics)

21.1000
26.2240

S/089/62/012/005/013/014
B102/B104

AUTHORS: Gruzinova, T. A., Ionaytis, R. R., Kamenshchikov, F. T., Popov, D. N.

TITLE: Calculation of transient states in a hydraulic loop containing a falling body

PERIODICAL: Atomnaya energiya, v. 12, no. 5, 1962, 421-423

TEXT: Transient-state calculations were carried out for a hydraulic loop (Fig. 1) with one vertical tube (1) in which a solid body 2(h=12m, d = 0.0506m) is allowed to fall; the elasticity of the liquid and the pipe walls is ignored. The purpose of the calculations was to see if the velocity v' of the falling body could be increased. A relation between the liquid pressure and flow rate in the system, on the one hand, and v on the other, was found. The liquid in the loop flows at w = 0.25 m/sec before the body starts falling in the vertical tube. The motion of the liquid is described by

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$$\frac{p_{0(1)-V}}{\gamma}=\alpha_{0(1)-V}\omega^2+\beta_{0(1)-V}\frac{d\omega}{d\tau}\pm$$

$$\pm\alpha_{III}(\omega-v)^2\mp\beta_{III}\frac{dv}{d\tau}. \qquad (1),$$

the motion of the body by

$$\frac{dv}{d\tau}=a+b(\omega-v)^2+c\frac{d\omega}{d\tau}, \qquad (3).$$

p is the pressure, γ the specific weight of the liquid, the α and β are numerically given coefficients, τ the duration of the fall, the double signs stand for $w \gtrless v$; a, b, and c are also numerically given. The equations are numerically solved when a) an accumulator (providing discharge and pressure of the liquid) is at the loop entry and b) an accumulator is at the top of the vertical tube. The results are graphically shown: $p_0/\gamma = f(\ )$ for (a) and w, v = f(T) for (b). a) At a water pressure of 20-30 kg/cm^2 the body travels along a path of 3.5 m in T = 0.8 - 1.2 sec. b) at p_{I-I} = 1, 4.5, and 9 kg/cm^2, T = 1.4, 1.07, and

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0.87 sec (path 3.5 m). Conclusions: 1) in the section I-I of a loop with constant pressure the body falls continuously; 2) with constant pressure at the entry of the vertical tube the body falls 3.5 m in 0.9 - 1.4 sec; 3) if the accumulator is placed at the vertical tube it is more effective than if it is at the loop entry. These calculations can be valuable for analyses of special hydraulic systems, such as in the safety shields of atomic power plants. There are 3 figures.

SUBMITTED: November 29, 1961

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GRUZINOVA, YE.D.

FUEL 3878. WORKING OUT A CLASSIFICATION OF THE TENDENCY OF PEATS TO SPONTANEOUS HEATING. Dragunov, S.S. and Gruzinova, E.D. (Torf. Prom. (Peat Ind., Moscow), Apr. 1955, 25-27). Two reactions which cause spontaneous heating and combustion involve the formation of peroxides. To throw light on these, experiments were made on the action of hydrogen peroxide on peats at about 20°C. A sharp rise in temperature usually occurred with lowland, but not with upland, peats. This is due to the catalytic action of iron in the lowland peats. (L).

(1)

Moscow Peat Inst.

GRUZINSKAYA, A.P.; PANFEROVA, Ye.A.

Treatment of trichocephaliasis with oxygen [with summary in English]
Med.paraz. i paraz.bol.26 no.2:182-184 Mr-Ap '57. (MLRA 10:7)

1. Iz poliklinik No.32 Zhdanovskogo rayona Moskvy i parazitologicheskogo otdela Leningradskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.
(TRICHOCEPHALIASIS, ther.
oxygen, rectal admin.)
(OXYGEN, ther. use
trichocephaliasis, rectal admin.)

GRUZINSKAYA, P.Z.

Carnival evening dedicated to physics. Fiz. v shkole 23 no.5:73 S-O '63. (MIRA 17:1)

1. 48-ya vos'miletnyaya shkola, Dnepropetrovsk.

[redacted]

SO: LC, Soviet Geography, Part I, 1951, unof.

GRUZINSKAYA, V.A.; NOVIKOV, Ya.A., redaktor; SAKHAROVA, N.V., tekhnicheskiy redaktor.

[Geography; textbook for the 5th class of auxiliary schools] Geografiia; uchebnik dlia 5 klassa vspomogatel'nykh shkol. Izd. 10-oe. Moskva, Gos. uchebno-pedagogicheskoe izd-vo ministerstva prosveshcheniia RSFSR, 1954. 118 p. (MLRA 8:1)
(Geography)

GRUZINSKAYA, V.A.

"Pedagogical readings" of the Academy of Pedagogical Sciences. Geog. v shkole 18 no.5:68-69 S-O '55. (MLRA 8:12)
(Geography--Study and teaching)

GRUZINSKAYA, V.; RAYEVA, Yu.

"Geography reader." N.I. Blonskaia, V.A. Raush. Reviewed by V. Gruzinskaia, IU. Raeva. Geog.v shkole 19 no.1:73-75 Ja-F '56. (MLRA 9:5)

(Geography) (Blonskaia, N.I.) (Raush, V.A.)

GRUZINSKAYA, V.A.

Work of the School Geography Section during 1956. Vop. geog. no.40: 223-226 '57. (MLRA 10:8)
(Geography--Study and teaching)

GRUZINSKAYA, V.; MALYATSKIY, L.; RAYEVA, Yu.; SHARETS, D.; YAKOVLEV, G.

A new geography draft program for the eight-year school. Geog. v shkole 22 no.4:1-7 Jl-Ag '59. (MIRA 12:11)
(Geography--Study and teaching)

SHARETS, D.S.; GRUZINSKAYA, V.A.

Work of the fifth grade teacher on the first themes in the new geography program. Geog.v shkole 22 no.4:27-30 Jl-Ag '59. (MIRA 12:11)

(Geography---Study and teaching)

SAUSHKIN, Yu.G.; SOLOV'YEV, A.I.; YEFREMOV, Yu.K.; KOTEL'NIKOV, V.L.; IOFA, L.Ye.; DANTSIG, B.M.; BARKOV, S.A.; GRUZINSKAYA, V.A.; BARKOVA, G.Ye.

V.A.Kondakov, 1886-1959; obituary. Vop. geog. no.54:174-176 '61. (MIRA 15:3)

(Kondakov, Vadim Aleksandrovich, 1886-1959)

GRUZINSKAYA, Z. P.

PHASE I BOOK EXPLOITATION SOV/3688

Akademiya nauk SSSR. Institut mashinovedeniya. Konferentsiya po tekhnologii mashinostroyeniya. Seminar po kachestvu poverkhnosti

Kachestvo poverkhnosti detaley mashin, sbornik 4. Tekhnologicheskiye metody obespecheniya ekspluatatsionnykh svoystv poverkhnostey detaley mashin i priborov. (Surface Quality of Machine Parts; Collection of Articles, No. 4. Operational Properties of the Surface Layer) Moscow, Izd-vo AN SSSR, 1959. 291 p. (Series: Its: Trudy) Errata slip inserted. 3,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya.

Resp. Ed.: P.Ye. D'yachenko, Professor; Ed. of Publishing House: G.B. Gorokhov; Tech. Ed.: T.P. Polozova.

PURPOSE: This collection of articles is intended for technical personnel concerned with the quality of surface finishes of machine parts.

COVERAGE: The collection of articles deals with problems of surface roughness and the effect of surface roughness on the wear and strength of machine parts. Among the topics discussed are the development of international standards for surface roughness, the effect of cutting fluids and cutting-tool vibration on the surface roughness of machined parts, the effect of lay direction on the wear of plane friction surfaces, methods and instruments for measuring surface roughness, and the processing of profilograms of finished surfaces. No personalities are mentioned. References follow several of the articles.

GRUZINSKIY, P.

For an efficient schedule of watch duty. Mor. flot 22 no.9:22-23 S '62. (MIRA 15:12)

1. Kapitan parokhoda "Dushanbe" Murmanskogo parokhodstva.
(Merchant marine—Watch duty)

GRUZINSKIY S. KH.

4681. Programma Kursa Tekhnika Bezopasnosti I Protivoprzharnaya Tekhnika (Dlya Lesokhoz Fak) 1954-1955 Ucheb. Goc. Tvilisi Izd-Vo Grvz S-Kh. In-ta, 1954. 88 23sm (M-Vo. vysshobrazovaniya SSSR. gruz ordena Tmud Krasnogo Znameni S-Kh In-T) 100 Ekz. Bespl-Na Grvz. Yaz--(54-572707. 634.95: 658.283/ 634.92:632.187) (071.1)

BORISEVICH, N.A.; GRUZINSKIY, V.V.

Determining temperatures of excited molecules of vapors by Stepnov's universal ratio. Dokl.AN BSSR 4 no.9:380-383 S '60. (MIRA 13:9)

1. Institut fiziki AN BSSR. Predst. akad. AN BSSR B.I.Stepanovym. (Vapors)

BORISEVICH, N.A.; GRUZINSKIY, V.V.

Electron spectra of anthraquinone vapors. Izv.AN SSSR.Ser.fiz. 24 no.5:545-548 My '60. (MIRA 13:5)

1. Institut fiziki AN BSSR.
(Anthraquinone--Optical properties)

Sovremennyye problemy lyuminestsentsii, 8th, 1959

Metody lyuminestsentnogo analiza; materialy soveshchaniya (Methods for Luminescence Analysis; Materials of the 8th Conference) Minsk, Izd-vo AN BSSR, 1960. 147 p. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk Belorusskoy SSR. Institut fiziki.

General Ed.: N. A. Borisevich; Ed.: L. Timofeyev; Tech. Ed.: F. Sidorko.

PURPOSE: This collection of articles is intended for chemists and physicists interested in molecular luminescence, and for scientific personnel concerned with applications of this and related phenomena in research in the life sciences.

COVERAGE: The collection contains 26 papers read at the Eighth Conference on Luminescence, which took place 19-24 October, 1959 (place not given). These studies are concerned principally with the development of new luminescence methods for quantitative and qualitative chemical analysis, and with the applications of luminescence in medical and biological research. They discuss luminescence methods for the determination of uranium, mercury, magnesium, aluminum, boron, and other elements, as well as luminescence methods for the diagnosis of skin cancer and the detection of grippe virus, pathogenic microorganisms, etc. The structural design of new instruments for luminescence analysis is described. The conference was not concerned with studies on the phosphorescence of crystal phosphors. There is a discussion of the contributions of Soviet specialists in molecular luminescence in the course of the past and a half preceding the conference. The articles of V. K. Matveyet (p. 75) and of V. V. Petriheyer (p. 79) have been annotated because of their importance. No personalities are mentioned. References accompany most of the articles.

AVAILABLE: Library of Congress

BORISEVICH, N.A.; GRUZINSKIY, V.V.

Effect of temperature, magnitude of the exciting quanta, and foreign gases on the structural electron spectra of molecules in vapors. Dokl. AN BSSR 7 no.5:309-312 My '63. (MIRA 16:12)

1. Institut fiziki AN BSSR. Predstavleno akademikom AN BSSR B.I. Stepanovym.

BORISEVICH, N.A.; GRUZINSKIY, V.V.

Studying the excited states of vapors of complex molecules on the basis of the universal relationship between fluorescence and absorption spectra. Part 1. Opt. i spektr. 14 no.1:39-44 Ja '63. (MIRA 16:5)

(Molecular spectra) (Quantum theory)

GRUZINSKIY, V.V.; BORISEVICH, N.A.

Studying the excited states of vapors of molecules on the basis of a universal relation between the fluorescence and absorption centers. Part 2: Structured spectra. Opt. i spektr. 15 no.4:457-463 O '63. (MIRA 16:11)

ACCESSION NR: AP4011506 S/0051/64/016/001/0171/0174

AUTHOR: Borisevich, N.A.; Gruzinskiy, V.V.; Tolkachev, V.A.

TITLE: Concerning anti-Stokes fluorescence of molecules

SOURCE: Optika i spektroskopiya, v.16, no.1, 1964, 171-174

TOPIC TAGS: molecular fluorescence, anti-Stokes fluorescence, fluorescence excitation, vapor fluorescence, solution fluorescence, fluorescence spectrum, absorption spectrum, 3,6-tetramethyldiaminophthalimide, 3-aminophthalimide

ABSTRACT: It has been demonstrated in some recent papers (I.Ketskemety,J.Dombi and R.Horvai,Acta Phys.Hung.12,No.263,1960; Ann.Phys.8,342,1961; M.N.Alentsev and L.A. Pakhomy*cheva,Opt.i spektr.12,565,1962; Yu.T.Mazurenko,Ibid.13,854,1962) that the decrease in the quantum efficiency of fluorescence of solutions under anti-Stokes excitation is connected with inactive absorption. In the present work it is shown, however, that in the case of thoroughly purified substances no decrease of the fluorescence efficiency of vapors and solutions occurs in the anti-Stokes region. The investigated substances were 3,6-tetramethyldiaminophthalimide and 3-aminophthalimide, which have been investigated earlier (B.S.Neporent and N.A.Borisevich,Opt.i

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ACC.NR: AP4011506

spektr.1,114,1956; DAN SSSR,94,447,1954; Yu.T.Mazurenko.Ibid.13,854,1962). They were synthesized and then thoroughly purified by repeated recrystallization and sublimation under vacuum at different temperatures. Adequate measures were taken to avoid contamination of any kind. The solution absorption spectra were recorded by means of an SF-4 spectrophotometer; the absorption of the vapors by means of a set-up assembled about an SF-4 spectrophotometer. The fluorescence spectra were measured by means of a high sensitivity photoelectric set-up. The absorption and fluorescence spectra in the approximate range from 18 000 to 26 000 cm^{-1} are reproduced in figures. In all cases the excitation function F_ν is linear. It is inferred that the "apparent" anti-Stokes decrease in fluorescence efficiency reported by other authors was connected with the presence of impurities that affected the weak absorption of the host in this spectral region. "The authors are grateful to T.E.Kolosova for synthesis and purification of the investigated substances." Orig.art.has: 2 figures

ASSOCIATION: none

SUBMITTED: 24May63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH NR REF SOV: 015 OTHER: 001

Card 2/2

GRUZINSKIY, V.V.

Application of a universal relation to the structural spectra of fluorescence and absorption of vapors of aromatic molecules. Izv.AN SSSR.Ser.fiz. 27 no.4:580-583 Ap '63. (MIRA 16:4)
(Aromatic compounds—Spectra)

GRUZINSKIY, Yu. master sporta

Advice of a master of sports. Pozh.delo 8 no.7:23 Jl '62.
(MIRA 15:8)

(Firemen) (Physical education and training)

[illegible], A.A., Inzhener-kapitan [illegible]; [illegible]
inzhener-kapitan 3-go ranga

Problems of personnel in perfecting weapons. [illegible] 47 no.2: [illegible] 64. ([illegible] 18:9)

GRUZINTSEV, N.I.

"Further technical progress in the footwear industry." Leg. prom. [16] no.11:17-18 N '56. (MLRA 10:1)

1. Vyrubshchik fabriki "Skorokhod."
(Shoe industry)

DONETS, S. (Rostov-na-Donu); KUZ'MIN, A. (Irkutsk); MEDVEDEV, N. (Saratov); LICHKOV, G. (Arkhangel'sk); TSYPIN, Ye. (Sverdlovsk); GITCHENKO, I. (Sochi); GRUZINTSEVA, A. (Novosibirsk); ALIMOV, R. (Alma-Ata); GOLOBORODOV, M. (Syktyvkar)

Outposts of air transportation. Grazhd.av. 20 no.4:22-24 Ap '63. (MIRA 16:5)

(Aeronautics, Commercial)

GRUZINTSEVA, A. N.

Gas purification from organic sulfur compounds by oxidation on activated carbon. Ya. D. Zel'venskii and A. N. Gruzintseva. *Trudy Gosudarst. Nauch.-Issledovatel'. i Proekt. Inst. Azot. Prom.* 1952, No. 1, 189–202 (Pub. 1953); *Referat. Zhur., Khim.* 1955, Abstr. No. 57400.—The oxidizing method for purification of gases from S compds. by activated carbon (AC) is investigated. Basic gas for the study is a mixt. obtained by decompn. of NH_3 contg. N_2, H, NH_3, air, water vapors, and certain amts. of CS_2 or COS. It is found that at normal temps., the purification of the gas from CS_2 is caused only by the direct absorption as a consequence of which the absorption of AC is low. At normal temps. the COS changes chemically on the AC surface with process characteristics typical for chemisorption processes. The optimum O_2 content for the purification from COS on Ac is ≈ 0.1%, and the NH_3 quantity should be 2.5–3 times more than S. Lowering the temp. improves the purification process, increases the absorption capability of AC, and decreases the consumption of NH_3. It is recommended that the relative humidity be kept at 50–60%. Best results are obtained with AC grain size 1–2 mm, and gas velocity 0.1 m./sec. (figuring on the app. cross section). The used AC is regenerated by water steam at a temp. over 350°.

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GRUZINTSEVA, A.V.

3400. Determination of organic sulphur compounds in a gas by converting them into hydrogen sulphide. Ya. D. Zel'venskii, A. N. Gruzintseva, and S. Yu. Gerchikova (*Zavod. Lab.*, 1956, **22**, 277–281).—The gas, freed from H_2S by passage through an absorbent containing 185 g of Na_2CO_3 and 150 g of $K_4Fe(CN)_6$ in 1 litre of water, enters a quartz tube (12 to 15 mm. × 80 cm), filled with pieces of quartz (3 to 5 mm in diameter) and heated in a tube furnace (50 to 60 cm in length) to between 900° and 1100° C, at a rate of 1 to 2 litres per sec. The H_2S formed is absorbed in 100 ml of 2 per cent. cadmium acetate soln. containing 10 ml of glacial acetic acid per litre. Excess of 0·01 or 0·02 *N* I is added and the excess is determined by titrating with thiosulphate, with starch as indicator. With sulphur contents greater than several tenths of a mg per cu. metre, the complete determination takes 15 to 20 min. Any O in the gas becomes converted into H_2O and does not interfere. The method can be used in the absence of organic compounds containing H by mixing 25 per cent. of H with the gas. G. S. Smith

LEYBUSH, A.G., kand. khim. nauk; GRUZINTSEVA, A.N.

Reactions of monoethanolamine with carbon disulfide and carbonyl sulfide. Part 2. Trudy GIAP no.8:5-16 '57. (MIRA 12:9)
(Ethanol) (Carbon disulfide) (Carbonyl sulfide)

LEYBUSH, A.G., kand. khim. nauk; GOL'DMAN, A.M.; GRUZINTSEVA, A.N.

Side reactions during the removal of carbon dioxide and hydrogen sulfide from coke-oven gas by the use of monoethanolamine. Part 3. Trudy GIAP no.8:124-144 '57. (MIRA 12:9)
(Coke-oven gas) (Gas purification) (Ethanol)

LEYBUSH, A.G.; LYUDKOVSKAYA, B.G.; GRUZINTSEVA, A.N.; LIKHACHEVA, A.S.; YANYKINA, Ye.V.; GOL'DMAN, A.M.

Effect of the thermal treatment of a nickel catalyst on the process of methane conversion. Khim. prom. no. 2:90-96 F '61. (MIRA 14:4)
(Methane) (Catalysts)

45075

S/051/63/014/001/007/031
E039/E120

24.3500

AUTHORS: Borisevich, N.A., and Gruzinskiy, V.V.

TITLE: Study of the excited states of the vapour of complex molecules on the basis of the universal relation between fluorescence and absorption spectra. I.

PERIODICAL: Optika i spektroskopiya, v.14, no.1, 1963, 39-44

TEXT: The fluorescence of the vapour of three different groups of organic compounds is investigated and analysed by means of the above universal relation. The dependence of the excitation temperature on the frequency of the exciting light ν_B is studied for: 3,6-tetramethyldiamino-, 3,6-diamino-, 3-aminophthalimide, and 1-aminoanthraquinone. It is shown that the frequency of electron transition ν_{el} is equal to the frequency for which $\Delta T = 0$ in the region of the maximum of the absorption band ($\nu_{el} = 22\ 750\ cm^{-1}$). $\Delta T = T^* - T$ where T^* is the excitation temperature and T the temperature at which the experiment is carried out. When $\nu_B < \nu_{el}$, $\Delta T < 0$, and at $\nu_B > \nu_{el}$ then $\Delta T > 0$, i.e. the excited molecules possess an excess vibrational energy. In the case of 3,6-tetramethyldiaminophthalimide, ΔT

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is independent of the temperature T at which the experiment is conducted, while for 3,6-diaminophthalimide, ΔT decreases with increase in T for all observed values of ν_B. The fluorescence and absorption spectra of perylene are also examined at temperatures of 513, 633 and 713 °K. With increasing temperature the spectrum shows strong broadening.

The function $F_\nu = \ln \frac{W_{\nu, T}}{\varepsilon_{\nu, T}} - 3 \ln \nu$ remains linear over the range of temperatures studied. $W_{\nu, T}$ is the luminescent power at temperature T, and $\varepsilon_{\nu, T}$ is the absorption coefficient at temperature T. This form of the universal relation can also be used for studying the excitation of molecules possessing spectral structure.

There are 2 figures and 1 table.

SUBMITTED: December 6, 1961

Card 2/2

1. ZINGITIS, A., GRAUDINA, V., GRUZIS, A.

2. USSR (600)

4. Sapropelites

7. Dry distillation of sapropel in a pilot plant with external heating. Latv. PSR Zin. Akad. Vestis 4, '51.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

ODIN', Ya.[Odins,J.]; BUSH,K.[Buss,K.]; KLYAVIN', Ya. [Klavins,J.]; MAYKE,P.[Maike,P.]; GRUZIS,A., kand. sel'khoz.nauk, retsenzent; OZOLIN,K.[Ozolins,K.], inzh., lesokhoz., retsenzent; LIELPETERS,P., red.; KRASOVSKA, M., tekhn. red.

[Drainage of forests] Mezu nosusinasana. By J.Odins. and others. Riga, Latvijas Valsts izdevnieciba, 1960. 282 p. [In Latvian] (MIRA 14:12)

(Latvia—Forests and forestry) (Drainage)

[illegible], A. Ya.

Gruvis, A. Ya.

"The Effect of Drying on the Growth of Pine Forests." Acad Sci Latvian SSR, Inst of Forestry Problems. Riga, 1955 (Dissertation for the degree of Candidate in Agricultural Sciences)

SO: Knizhnaya letopis' No. 27, 2 July 1955

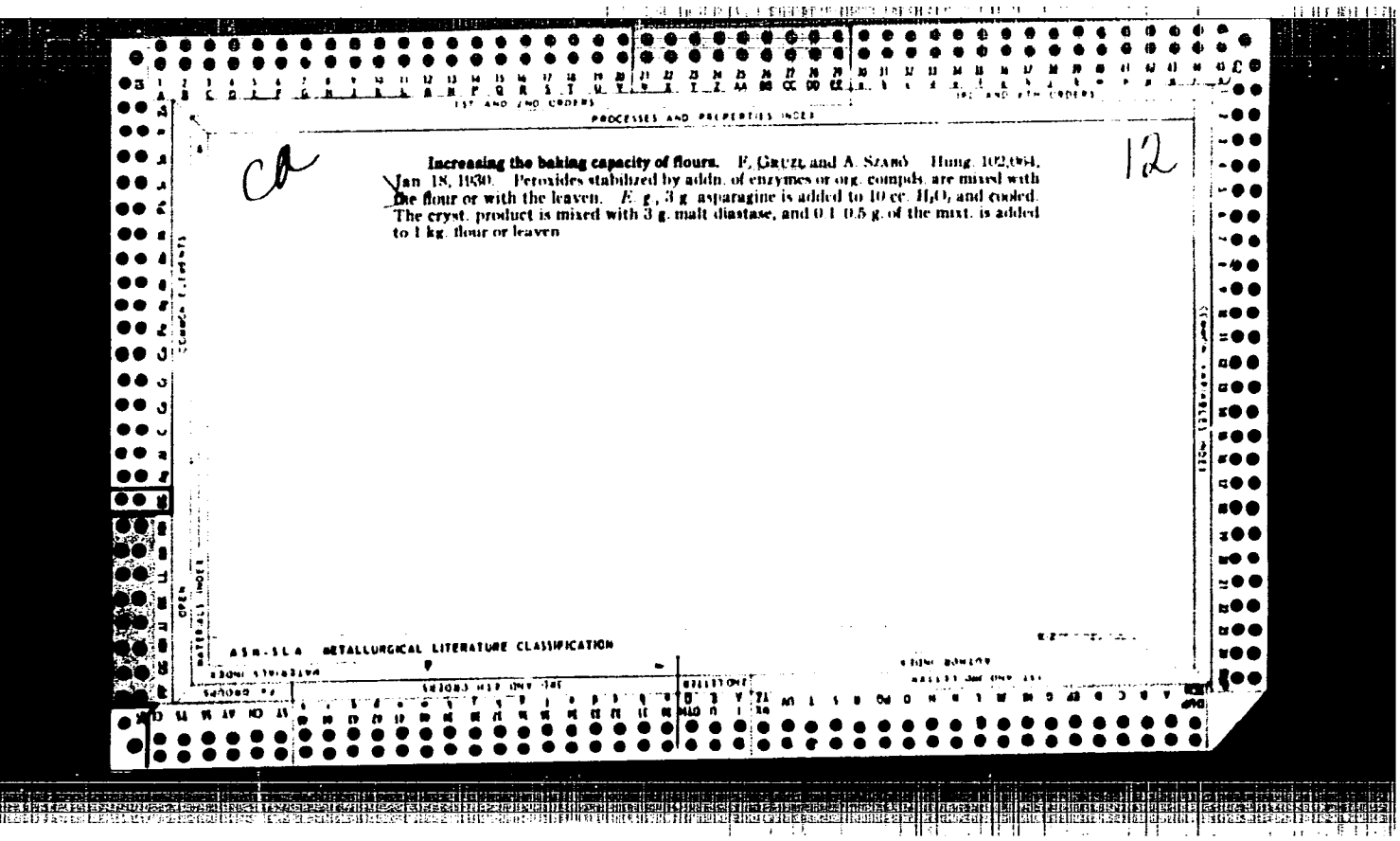
1. GNUZKOV, I. YA.

2. USSR (600)

4. Steel--Analysis

7. Carbide analysis in investigating the process of graphitization in steel, Lit. proizv., No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.



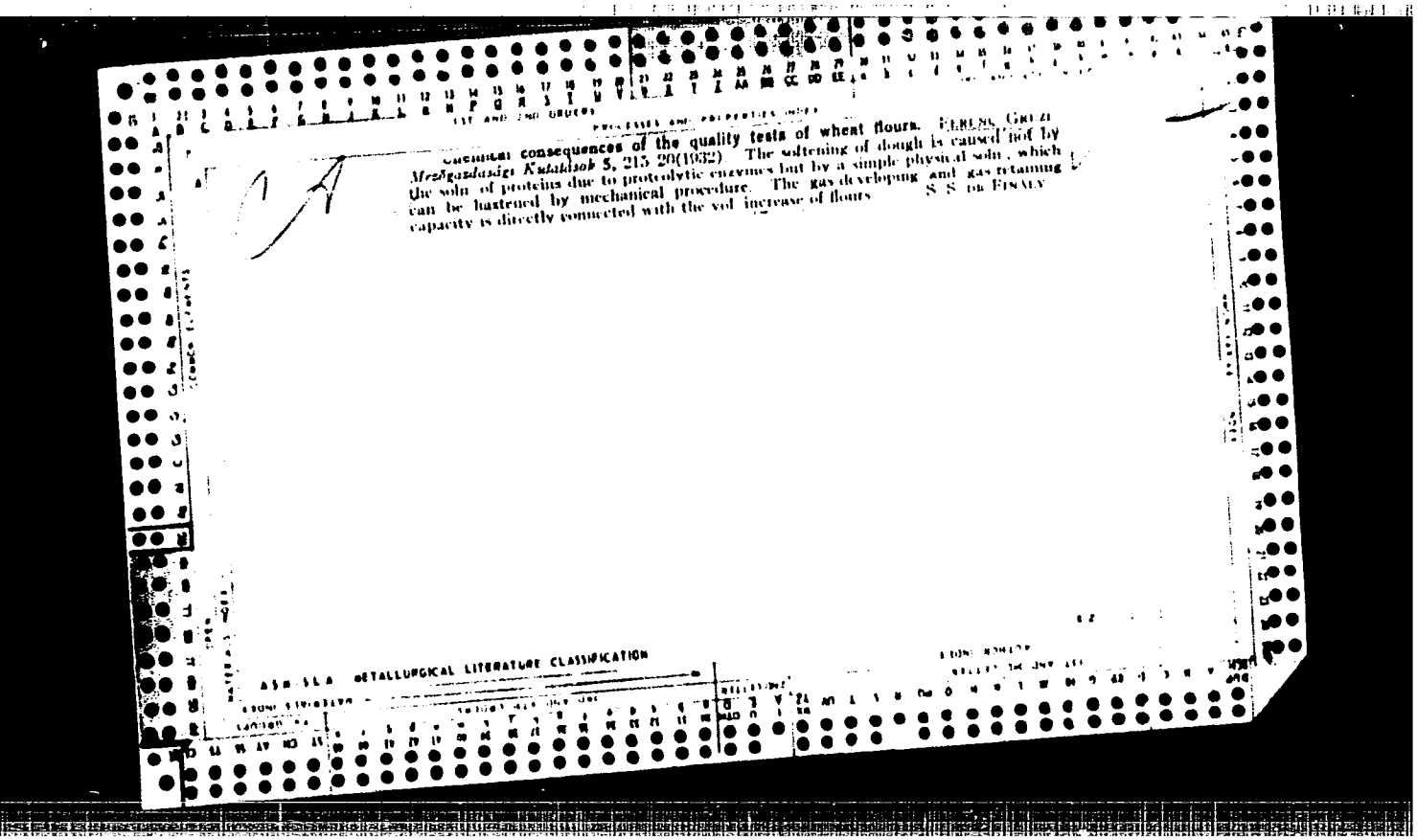
PROCESSES AND PROPERTIES INDEX

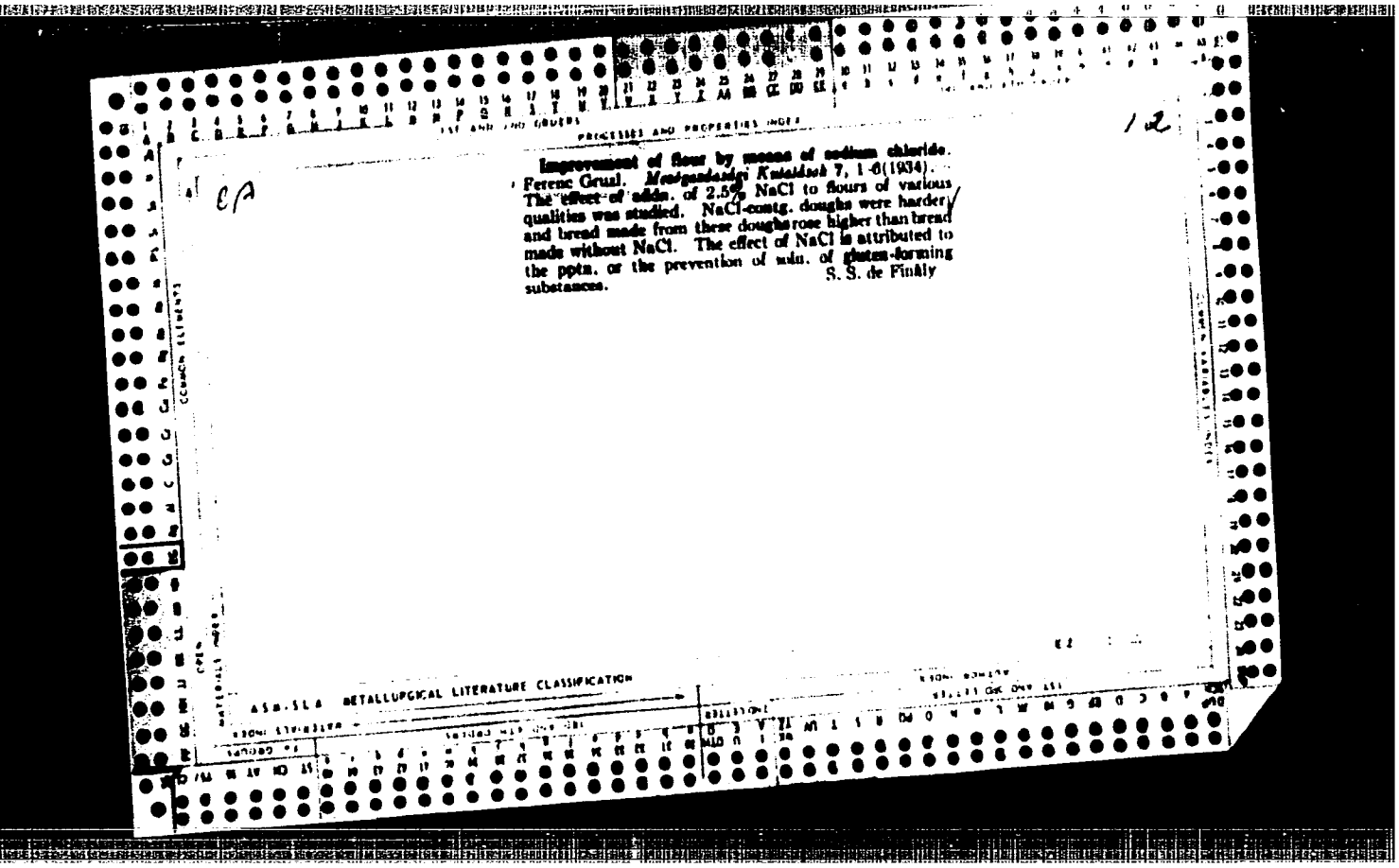
CA

12

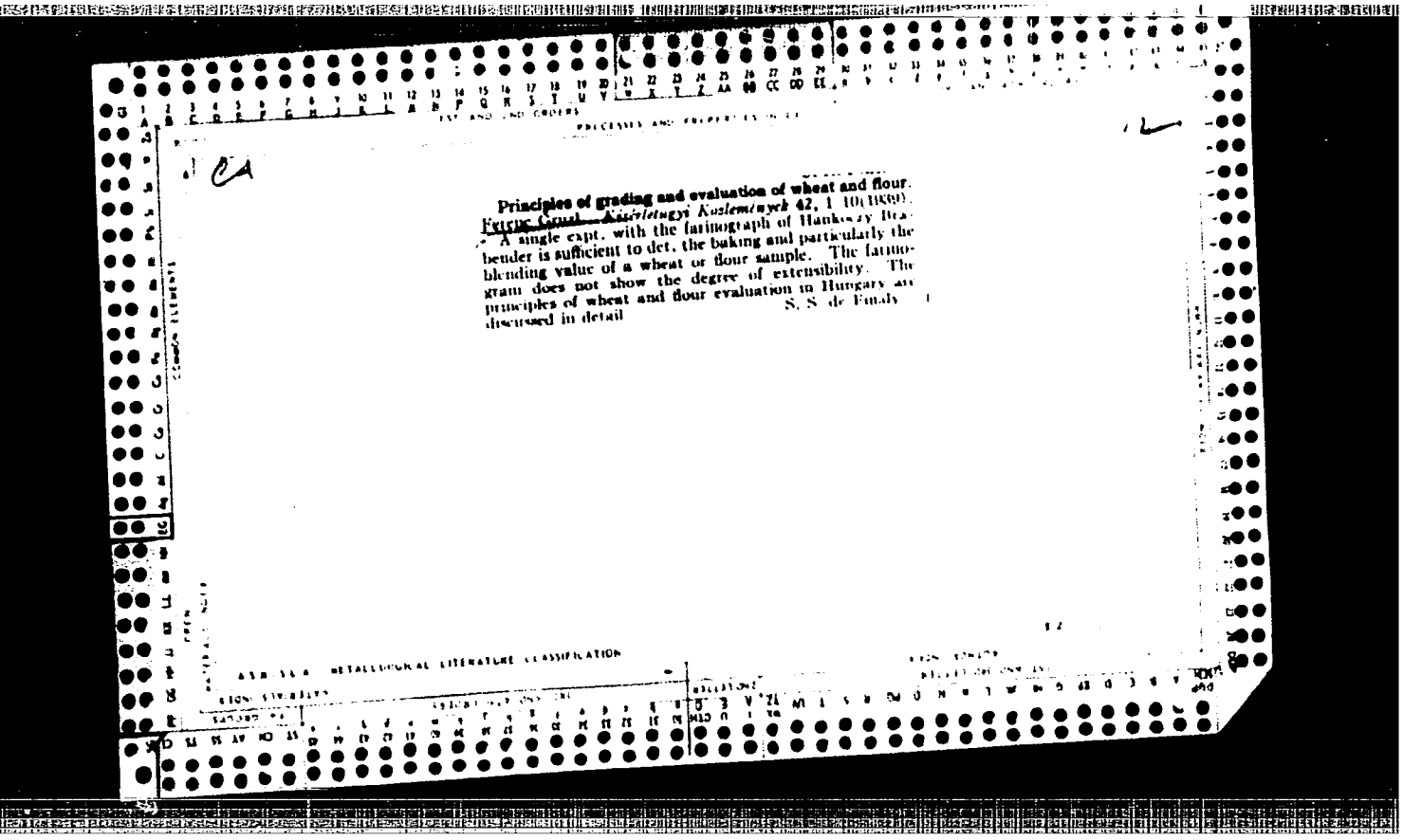
Increasing the baking capacity of flours. E. Gruger and A. Szanó. Hung. 102,064, Jan. 18, 1930. Peroxides stabilized by addn. of enzymes or org. compds. are mixed with the flour or with the leaven. *E. g.*, 3 g. asparagine is added to 10 cc. H_2O_2 and cooled. The cryst. product is mixed with 3 g. malt diastase, and 0.1–0.5 g. of the mixt. is added to 1 kg. flour or leaven

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

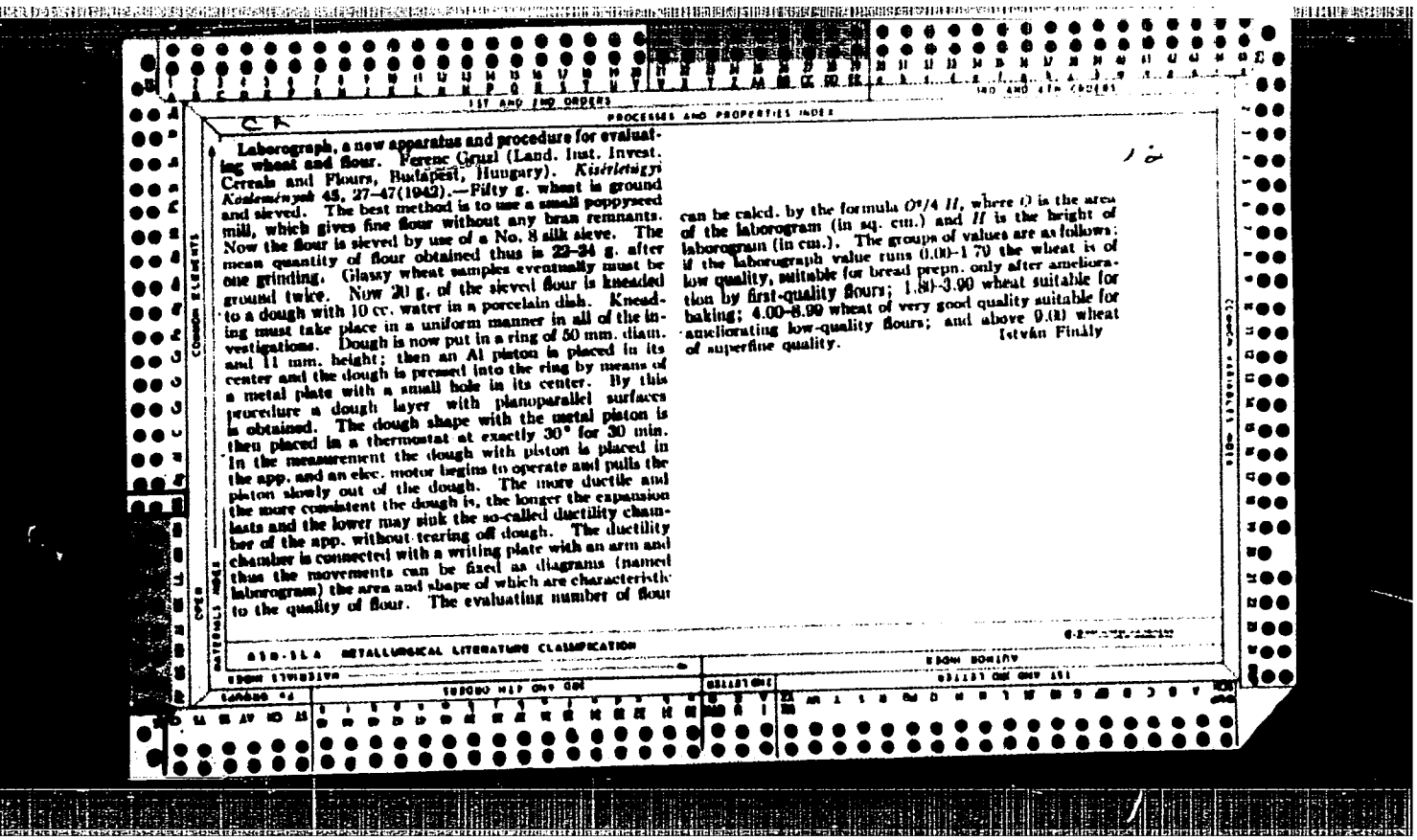




Improvement of flour by means of sodium chloride. Ferenc Grual. *Mezogazdasagi Kutatasok* 7, 1-6(1934). The effect of addn. of 2.5% NaCl to flours of various qualities was studied. NaCl-contg. doughs were harder and bread made from these doughs rose higher than bread made without NaCl. The effect of NaCl is attributed to the pptn. or the prevention of addn. of gluten-forming substances.
S. S. de Finály



Principles of grading and evaluation of wheat and flour.
Ferenc Gaudi. *Közlemények* 42, 1 10(1969).
A single expt. with the farinograph of Hankóczy Bra-
bender is sufficient to det. the baking and particularly the
blending value of a wheat or flour sample. The farino-
gram does not show the degree of extensibility. The
principles of wheat and flour evaluation in Hungary are
discussed in detail
S. S. de Finaly



PROCESSES AND PROPERTIES INDEX

Laborograph, a new apparatus and procedure for evaluating wheat and flour. Ferenc Gönül (Land. Inst. Invest. Cereals and Flours, Budapest, Hungary). *Kísérletügyi Közlemények* 45, 27–47(1942).—Fifty g. wheat is ground and sieved. The best method is to use a small poppyseed mill, which gives fine flour without any bran remnants. Now the flour is sieved by use of a No. 8 silk sieve. The mean quantity of flour obtained thus is 22–24 g. after one grinding. Glassy wheat samples eventually must be ground twice. Now 20 g. of the sieved flour is kneaded to a dough with 10 cc. water in a porcelain dish. Kneading must take place in a uniform manner in all of the investigations. Dough is now put in a ring of 50 mm. diam. and 11 mm. height; then an Al piston is placed in its center and the dough is pressed into the ring by means of a metal plate with a small hole in its center. By this procedure a dough layer with planoparallel surfaces is obtained. The dough shape with the metal piston is then placed in a thermostat at exactly 30° for 30 min. In the measurement the dough with piston is placed in the app. and an elec. motor begins to operate and pulls the piston slowly out of the dough. The more ductile and the more consistent the dough is, the longer the expansion lasts and the lower may sink the so-called ductility chamber of the app. without tearing off dough. The ductility chamber is connected with a writing plate with an arm and thus the movements can be fixed as diagrams (named laborogram) the area and shape of which are characteristic to the quality of flour. The evaluating number of flour can be calcd. by the formula $O^2/4\ H$, where O is the area of the laborogram (in sq. cm.) and H is the height of laborogram (in cm.). The groups of values are as follows; if the laborograph value runs 0.00–1.70 the wheat is of low quality, suitable for bread prepn. only after amelioration by first-quality flours; 1.80–3.90 wheat suitable for baking; 4.00–8.99 wheat of very good quality suitable for ameliorating low-quality flours; and above 9.00 wheat of superfine quality.

István Finály

GRUZL, F.

"Accelerated Methods of Making Bread." p. 242. (ELELMEZESI IPAR. Vol. 5, no. 8 Aug. 1951, Budapest.)

SO: Monthly List of East European Accessions, Library of Congress, June 1954 Uncl. Vol. 3, No. 6

HUNGARY / Chemical Technology. Chemical Products and Their Application. Food Industry. H-28

Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 2779.

Author : Gruzl, F., Rajakai, P.
Inst : Not given.
Title : The Study on Baking Properties of Hungarian Varieties of Wheat During 1953-1955.

Orig Pub: Novenytermeles, 1957, 6, No 4, 289-302.

Abstract: Based on a three year study of several thousand wheat samples, it was established that the amount of gluten and the quality of dough depend on the variety and factors connected with a growing locality (soil and climatic conditions, soil treatment and others). It was shown that the selection of seed is not used to a full degree.

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GRUZMAN, A.D.; MAKSIMOV, A.V.; REYFMAN, L.M.

Lower boundary of Oligeocene in the eastern Carpathian. Dokl. AN SSSR 145 no.5:1110-1112 '62. (MIRA 15:8)

1. Ukrainskiy nauchno-issledovatel'skiy geologorazvedochnyy institut. Predstavleno akademikom N.M.Strakhovym.
(Carpathian Mountains--Geology, Stratigraphic)

VORONOV, F.D., prof.; SELIVANOV, N.M., kand.tekhn.nauk; RABINOVICH, Ye.I., kand.tekhn.nauk; UZIYENKO, A.M., inzh.; TKACHENKO, I.A., inzh.; KUSTOBAYEV, G.G., inzh.; IVANOVA, N.G., inzh.; RYABCHIKOV, F.D., inzh.; GRUZNOV, A.K., inzh.

Developing a technology for the casting and quality investigation of 21-ton rimmed steel ingots. Stal' 22 no.8:709-713 Ag '62. (MIRA 15:7)

(Steel ingots)

TKACHENKO, I.A.; FILATOV, A.D.; UZLYENKO, A.N.; GRUZKOV, A.K.; DEYNEKO, D.I.; ARYCHENKOV, V.P.; ZAYAKIN, B.I.

Quick pouring and the quality of rimmed steel. Metallurg 10 no.8: 17-19 Ag '64. (MIRA 17:11)

1. Magnitogorskiy metallurgicheskiy kombinat.

GRUZNOV, G.F.

The ZR53-type hydraulic copying and bulging lathe. Biul.tekh.-ekon.inform. no.6:17-19 '58. (MIRA 11:8)
(Lathes)

GRUZNOV, G.F.

Production of large-size tablets and their use in the the manufacture of plastic goods. Plast.massy no.1:65-68 '61. (MIRA 14:2)
(Plastics industry—Equipment and supplies)

GRUZNOV, G.F., inzh.

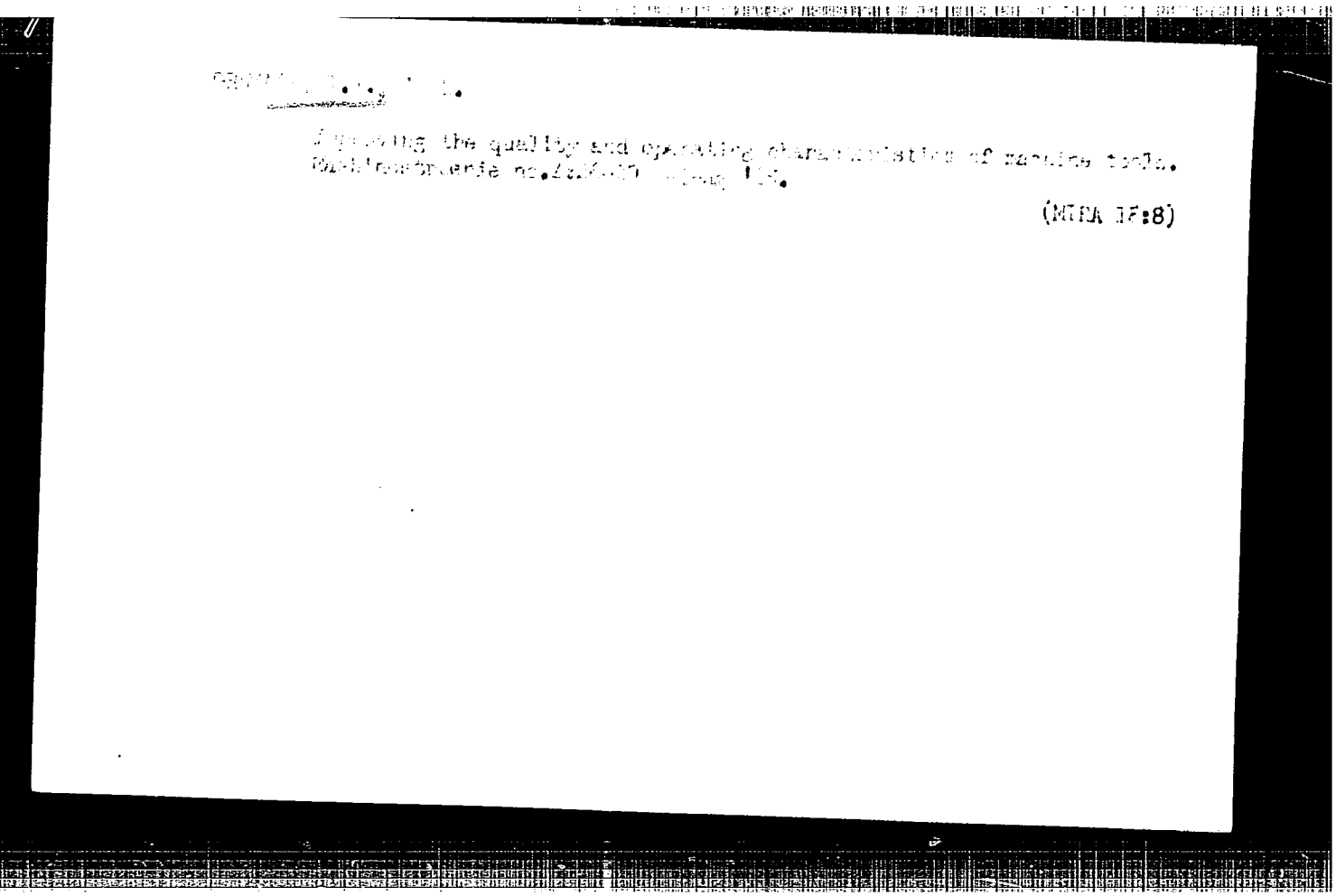
Hydraulic turning device. Khim. mashinostr. no.1:34-41 Ja'63
(MIRA 17:7)

GRUZNOV, I.

A new device. Mashinostroitel' no.11:12 N '61. (MIRA 14:11)
(Measuring instruments)

GRUZNOV, I.I.

Hydraulic compression dynamometer. Mashinostroitel' no.11:28 N '62. (MIRA 15:12)
(Dynamometer)



improving the quality and operating characteristics of machine tools.

(MIRA 17:8)

GRUZNOV, I.I., inzh.

Introduction of synthetic diamonds at the radial-boring machinery plant. Mashinostroenie no.6:31-33 N-D '65. (MIRA 18:12)

ACC NR: AP6033155 SOURCE CODE: UR/0105/66/000/010/0082/0083

AUTHOR: Gorina, N. B.; Gruznov, Yu. A.; Kolobanov, V. V.; Matorin, V. I.; Prokoshin, A. F.; Rad'kov, A. I.; Sokolov, V. I.; Tret'yakov, B. N.; Fedotov, L. N.; Khromov, S. M.; Kuleshov, V. F.

ORG: Central Scientific Research Institute of Ferrous Metallurgy im. I. P. Bardin (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)

TITLE: The 65BT superconducting alloy

SOURCE: Elektrichestvo, no. 10, 1966, 82-83

TOPIC TAGS: superconducting alloy, superconductivity

ABSTRACT: A new, relatively low cost Nb-Ti based alloy, designated 65BT, which meets all the major requirements for superconductors has been developed. Because of its properties it can be used in 1) magnetizing devices, such as superconducting solenoids, for field strengths varying from 20 to 80 koe, and 2) wires 0.1—0.3 mm in diameter and up to 12,000 m long and tapes 5 μ thick. The alloy, which contains 65% niobium, 25% titanium, and several other components, is produced in

Card 1/2 UDC: 537.312.62

T. 02991-67

ACC NR: AP6033155

an arc furnace and, after thermal processing, is cold drawn. For use in superconducting solenoids, the alloy requires a 0.02—0.05-mm copper coating. Orig. art. has: 1 table.

SUB CODE: 20/ SUBM DATE: none/ ATD PRESS: 5099

awm

Card 2/2

GRUZOV, Ye.N.

Adaptation of gastropod mollusks to parasitism. Zool.zhur. 44 no.11:1620-1630 '65. (MIRA 18:12)

1. Zoologicheskiy institut AN SSSR, Leningrad.

GRUZOVA, M.N.

Karyosphere in the oogenesis of a darkling beetle. TSitologiia 4 no.3:335-338 My-Je '62. (MIRA 16:3)

1. Laboratoriya morfologii kletki Instituta tsitologii AN SSSR, Leningrad.
(OOGENESIS) (CHROMOSOMES) (INSECTS--PHYSIOLOGY)

GRUZNOV, N.I.

How we increase the yield of clover. Zemledelie 5 no.4:74-75 Ap '57. (MLRA 10:6)

1. Krasnokholmskaya Mashinno-traktornaya stantsiya, Kalininskoy oblasti.

(Clover)

GRUZNOV, N.I.

Growing high-quality flax. Nauka i pered.op.v sel'khoz. 7 no.7:57-59 Jl. '57. (MLRA 10:8)

1.Direktor Krasnokholmskoy oporno-pokazatel'noy Mashinno-traktornoy stantsii Kalininskoy oblasti.
(Flax)

GRUZNOV, N. I

Sorting helps to improve the quality of retted flax straw.
Nauka i pered.op.v sel'khoz. 9 no.8:16-17 Ag '59.
(MIRA 12:12)

1. Direktor Krasnokholmskoy remontno-tekhnicheskoy stantsii.
(Flax)

Gruzin, P. L.

PHASE I BOOK EXPLOITATION SOV/4502

Akademiya nauk SSSR. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, tom 6 (Investigations of Heat-Resistant Alloys, Vol. 6) Moscow, 1960. 319 p. Errata slip inserted. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A. A. Baykova. Nauchnyy sovet po probleme zharoprochnykh splavov.

Editorial Board: I. P. Bardin (Deceased) Academician, G. V. Kurdyumov, N. V. Ageyev, Corresponding Member, Academy of Sciences USSR (Resp. Ed.), I. A. Oding, L. M. Pavlov, and I. F. Zudin, Candidate of Technical Sciences; Ed. of Publishing House: V. A. Klimov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This book is intended for research workers in the field of physics of metals and for metallurgists, particularly those working on heat-resistant alloys.

COVERAGE: This collection of 45 articles deals with various problems in the production of heat-resistant alloys. Special attention is paid to the mechanisms of deformation of such metals as aluminum, copper, iron, and nickel. Various defects and failures of metals are analyzed, and means for increasing the heat resistance and plasticity are described. Among the special problems discussed are: electrolytic conductivity of iron-aluminum alloys in the solid state; the mobility of atoms in nickel-iron alloys, depending upon defects of their crystalline structure; the kinetics of change in isolated pores; the irreversible thermal transformation of solid bodies, etc. No personalities are mentioned. References follow each article.

AVAILABLE: Library of Congress

NEKHENDZI, Yu.A.; GIRSHOVICH, N.G.; GRUZNYKH, I.V.; BILYKH, V.Ya.; KUPTSOV, I.V.; SIMANOVSKIY, M.P.; ANTIPOV, N.V.

Foundry properties of heat-resistant alloys. Issl. po zharopr. splav. 6:308-313 '60. (MIRA 13:9)
(Heat-resistant alloys) (Founding)

S/128/61/000/006/002/004
A054/A127

AUTHORS: Gruznykh, I.V.; Nekhendzi, Yu.A.

TITLE: Technological testing of hot cracks in steel castings

PERIODICAL: Liteynoye proizvodstvo, no. 6, 1961, 7 - 9

TEXT: The technological tests generally used to determine the development of hot cracks do not fully meet the requirements, because they principally record the effect of the metal quality and the casting temperature within narrow limits. The technological test suggested simulates the conditions of industrial casting adequately, while, moreover, the effects of various factors involved in the casting process can be studied as well. A ring is used as test specimen which has a cylindrical part, 100 mm in height and a conical part, 50 mm in height, and walls of 6 and 20 mm, respectively. The inner hollow part of the ring is formed by a core, which ensures the required degree of shrinkage delay, actually causing the hot cracks. The upper part with a thicker wall which is connected to the thinner wall of the lower part ensure the conditions necessary for thermal delay of shrinkage and consequently for hot cracks at the bend where the thin and thick wall sectors meet. The upper tapered part can also be made cylindrical in order

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to increase the capacity of the specimen. The runner system consists of a stand pipe and a feeder. There are two dead heads at the top of the specimen, each 25 mm in diameter. Some 15 kg of metal are fed tangentially into the cylindrical part. The size and shape of the runner system ensure that pouring takes a long time, so that a high temperature is obtained in the specimen in the zone where the metal enters. All this increases the sensitivity of the test to a number of external factors affecting the crack formation. The feeder widens upward towards the stand pipe in order to prevent solidification. Hot cracks usually form in the cylindrical part of the specimen and at the bend where the thick and thin wall sectors meet. The tendency of the casting to cracking is usually assessed by the degree of its crack resistance. However, the parameters indicating this degree do not give an indication of the size of the cracks that form. Nor is it sufficient to assess the tendency of the casting to crack formation to the length of the cracks. The "cracked" condition which should be applied for completing the parameter of crack resistance takes into account both the length and the width of the cracks formed. Therefore, it is suggested to use the area of cracks on the surface of the casting as quantitative parameter of its cracked condition. Tests carried out with carbon and alloyed structural steels prove that the method based on the area of cracks is reliable. The results obtained with this method corres-

Technological testing of hot cracks in steel castings

pond to those received for crack resistance by conventional methods. By calculating the crack area in the casting, the steels investigated could be arranged according to their crack resistance. Other casting factors such as the core mixture were also studied in the laboratory of the Leningradskiy politekhnicheskiy institut (Leningrad Polytechnic Institute). When a composition of 94% quartz sand, 6% refractory clay and 6% liquid glass (density 1.5), having a strength of 0.40 - 0.50 kg/cm^2 in moist condition and 3.0 - 3.5 kg/cm^2 when dry, was used, no cracks formed at the wall bend of carbon steel castings, most probably due to the slight difference in the thickness of the wall sectors for the given casting conditions. By changing the ratio of thickness of thin and thick wall sectors in the specimen it is possible to determine the critical wall thickness, which for given local circumstances is necessary to prevent crack formation. As it is easily possible to modify the various factors of casting in the test suggested it is suitable for the determination of the effect of these factors and of steel composition on crack formation. There are 5 figures, 3 tables and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: H.F. Hall, "Iron and Steel", no. 15, 1936, 65 - 93; K. Bakius, "Foundry Trade Journal", v. 104, no. 2156 and 2159, 1958.

Card 3/3

ACCESSION NR: AT4016608 S/3071/63/000/000/0020/0026

AUTHOR: Gruzny*kh, I. V. (Engineer)

TITLE: Crack resistance of alloy steels

SOURCE: Osnovny*ye zadachi razvitiya liteynogo proizvodstva i uluchsheniya yego spetsializatsii (Basic problems of the development of foundry production and the improvement of its specialization). 16 Vsesoyuznaya n.-tekhn. konferentsiya. Trudy*. Moscow, 1963, 20-26

TOPIC TAGS: crack resistance, austenitic steel, steel, alloy steel, crack formation

ABSTRACT: The percentage and complexity of thin-walled steel castings is constantly increasing. This causes difficulties due to an increase in the number of thermal cracks. There are two ways of eliminating these cracks:technologically and metallurgically. The article considers the effect of different alloying elements on crack resistance, as well as the crack resistance of various steel alloys (see Fig. 1 of the Enclosure). On the basis of laboratory tests the author concludes that the best method of improving crack resistance is the addition of certain alloying elements.: C, Mn, Cr, Ni, W, Mo, Nb, and S were tested. For these alloys it was found that decreasing the nickel content and increasing the tungsten,

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molybdenum, and manganese content results in higher crack resistance. For the widely-used chromium-nickel austenitic steels, partial replacement of nickel by manganese improves the crack resistance. "The work was carried out during consultation with Yu. A. Nekhendz', Engineer V. N. Dudorova took part in conducting the tests." Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: none

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ACCESSION NR: AT4037526 S/2563/63/000/224/0084/0096

AUTHOR: Gruzny*kh, I.V.; Kochkareva, G.P.

TITLE: Flowability of heat resistant alloys

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 224, 1963. Liteyny*ye svoystva zharoprochny*kh splavov.(Castability of heat-resistant alloys), 84-96

TOPIC TAGS: heat resistant alloy, heat resistant alloy castability, iron based alloy, nickel based alloy, Nichrome alloy, austenitic steel, high alloy steel, alloy No. 3, alloy No. 6, alloy No. 300, alloy 111, alloy Kh1, alloy Kh32, alloy LA3, alloy EI612, alloy flowability, spiral sample method, vacuum suction method, flowability test procedure, alloy flowability

ABSTRACT: Vacuum suction and improved spiral sample methods were employed to study dependence of the flowability of basic heat resistant systems and commercial alloys (see Nekhendzi, Yu. A., p. 9-23, same book, for all compositions) on thermal and physical

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